

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A simulation method for simulating a behavior of a mechanism of a mechanical device that is regulated by a mechanism control software along a time axis, comprising:

    parsing a source program of a hybrid model of the mechanical device, the source program including:

        a first source code defining in a hybrid model language occurrences of first and second events[[],];

        a second source code defining in the hybrid model language continuous system equations that are activated or deactivated upon occurrence of the first event[[],];

        a third source code defining an additional process which is called when the second event is occurred;

        generating from the second source code a fourth source code of a model equation registration program which converts data structures of all the continuous system equations into tree structures as internal data expressions;

        generating from the first source code a fifth source code of an event control program which calls a function of activating or deactivating the continuous system equations when the first event is occurred, and calls the additional process when the second event is occurred;

        generating from the third source code a sixth source code of additional processing program which is called in the event control program;

        executing a model equation registration program based on the fourth source code;

        executing an event control program based on the fifth source code at each time step upon execution of a simulation;

executing the simulation to output data that expresses the behavior of the mechanism, wherein an activated one of the continuous system equations is solved by numerical integration along the time axis, using the converted data structure; and executing an additional processing program based on the sixth source code, using the same program source as the hybrid model, wherein a control signal including the data is exchanged to/from the mechanism control software.

Claim 2 (Cancelled).

Claim 3 (Previously presented): The method according to claim 1, further comprising:

exchanging the control signal with the mechanism control software through an input/output port in accordance with the additional processing program.

Claim 4 (Original): The method according to claim 1, wherein the first event contains an evaluation result of internal variables of the mechanism.

Claim 5 (Currently Amended): A computer readable storage medium storing instructions of a computer program for simulating a behavior of a mechanism of a mechanical device that is regulated by a mechanism control software along a time axis, which when executed by a computer results in performance of steps comprising:

parsing a source program of a hybrid model of the mechanical device, the source program including:

a first source code defining in a hybrid model language occurrences of first and second events[[,]];

a second source code defining in the hybrid model language continuous system equations that are activated or deactivated upon occurrence of the first event[[],];

a third source code defining an additional process which is called when the second event is occurred;

generating from the second source code a fourth source code of a model equation registration program which converts data structures of all the continuous system equations into tree structures as internal data expressions;

generating from the first source code a fifth source code of event control program which calls a function of activating or deactivating the continuous system equations when the first event is occurred, and calls the additional process when the second event is occurred;

generating from the third source code a sixth source code of additional processing program which is called in the event control program;

executing a model equation registration program based on the fourth source code;

executing an event control program based on the fifth source code at each time step upon execution of a simulation;

executing the simulation to output data that expresses the behavior of the mechanism, wherein an activated one of the continuous system equations is solved by numerical integration along the time axis, using the converted data structure; and

executing an additional processing program based on the sixth source code, using the same program source as the hybrid model, wherein a control signal including the data is exchanged to/from the mechanism control software.

Claim 6 (Cancelled).

Claim 7 (Previously Presented): The computer readable storage medium according to claim 5, storing further instructions which when executed by a computer results in performance of steps further comprising:

exchanging the control signal with the mechanism control software through an input/output port in accordance with the additional processing program.

Claim 8 (Original): The computer readable storage medium according to claim 5, wherein the first event contains an evaluation result of internal variables of the mechanism.

Claims 9-20 (Cancelled).